IFW AF/2631/4

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
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Serial No.: 09/587,727

Filed: JUNE 5, 2000

For: VARIABLE RATE MESSAGE CODING

Examiner: K. Burd

Group Art Unit: 2631

Att'y Docket: 2100.001500

Customer No. 046390

APPEAL BRIEF

CERTIFICATE OF MAILING
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Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant hereby submits this Appeal Brief to the Board of Patent Appeals and Interferences in response to the final Office Action dated January 7, 2005. A Notice of Appeal was filed April 4, 2005, so this Appeal Brief is believed to be timely filed.

A check in the amount of $500.00 for filing this Appeal Brief is attached hereto. However, should the check be inadvertently omitted, the Director is authorized to deduct said fees from Williams, Morgan & Amerson's P.C. Deposit Account 50-0786/2100.001500.

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I. REAL PARTY IN INTEREST

The present application is owned by Lucent Technologies, Inc. The assignment of the present application to Lucent Technologies, Inc., is recorded at Reel 11183, Frame 0737.

II. RELATED APPEALS AND INTERFERENCES

Applicant is not aware of any related appeals and/or interferences that might affect the outcome of this proceeding.

III. STATUS OF THE CLAIMS

Claims 1-17 and 28-38 are pending in the application. Claims 1-4, 10-13, 28-31, and 37 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Meyer (U.S. Patent No. 5,541,595) in view of Pollman (U.S. Patent No. 5,233,348) and further in view of Berger (US 2001/0012271). Claims 5-9, 14-17, 32-36, and 38 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Meyer in view of Pollman and Berger, and further in view of Padovani (U.S. Patent No. 6,411,799).

IV. STATUS OF AMENDMENTS

There were no amendments after the final rejections.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claims 1, 5, 10, 14, and 37-38 set forth, among other things, a method for encoding messages that includes identifying at least a first plurality of messages indicative of a corresponding first plurality of data transmission rates and second plurality of

messages indicative of a corresponding second plurality of data transmission rates based on a prior transmitted message. The claimed first and second pluralities of messages are unequal. The method also includes transmitting a message from one of at least the first and second pluralities of messages. The messages set forth in independent claims 10, 14, and 37-38 are transmit rate request messages. Exemplary embodiments of the invention set forth in claims 1, 5, 10, 14, and 37-38 are shown in Figures 4-5 and discussed between line 30 on page 3 of the specification and line 5 on page 5 of the specification.

Independent claims 28 and 32 set forth, among other things, a method for encoding messages that includes identifying at least a first group of messages having a first plurality of messages and a second group of messages having a second plurality of messages based on a current system state. The claimed first and second pluralities are unequal. The method also includes transmitting a message from one of at least the first and second group of messages. Exemplary embodiments of the invention set forth in claims 28 and 32 are shown in Figures 4-5 and discussed between line 30 on page 3 of the specification and line 5 on page 5 of the specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant respectfully requests that the Board review and overturn the rejections present in this case. The following issues are presented on appeal in this case:

(A) Whether claims 1-4, 10-13, and 37 are obvious over Meyer in view of Pollman and further in view of Berger;

(B) Whether claims 28-31 are obvious over Meyer in view of Pollman and further in view of Berger;

(C) Whether claims 5-9, 14-17, and 38 are obvious over Meyer in view of Pollman and Berger, and further in view of Padovani; and

(D) Whether claims 32-36 are obvious over Meyer in view of Pollman and Berger, and further in view of Padovani.

VII. ARGUMENT

A. Legal Standards

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. That is, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. Third, there must be a reasonable expectation of success.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142.

A recent Federal Circuit case emphasizes that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35. Moreover, it is the claimed invention, as a whole, that must be considered for purposes of determining obviousness. A mere selection of various bits and pieces of the claimed invention from various sources of prior art does not render a claimed invention obvious, unless there is a suggestion or motivation in the prior art for the claimed invention, when considered as a whole.

B. Claims 1-4, 10-13, and 37 are not obvious over Meyer in view of Pollman and further in view of Berger.

Meyer is concerned with decoding compressed image data that has been encoded using a variable length encoding technique. In particular, Meyer describes a technique in which discrete cosine transform (DCT) coefficients provided by a high-definition television encoder are associated with codes, S_1-S_6, which may be represented by Huffman codes. The Huffman coding used to represent each code may be determined based on the probability of occurrence of the codes. See Meyer col. 1, line 14 – col. 2, line 10 and Table 1. However, the Examiner admits that Meyer does not teach or suggest identifying at least a first and second plurality of messages based on a prior transmitted message and therefore relies on Pollman to teach sending a probability distribution prior to transmission of a message frame. The Examiner also admits at that neither Meyer nor Pollman teach or suggest that the first and second pluralities of messages are indicative of corresponding pluralities of data transmission rates or that the first and second

groups of messages have a first and second plurality of transmit rate request messages, respectively.

The Examiner therefore relies on Berger to teach transmitting a data rate request signal that may be used to transmit data blocks in a network. The Examiner alleges that it would be obvious to combine the data rate request signal described in Berger with Meyer and Pollman to arrive at Applicants' claimed invention. In particular, the Examiner alleges on that Berger provides motivation to combine the cited references to arrive at Applicants' claimed invention because Berger teaches that it is desirable to transmit a data rate request signal to change the present rate of data transmission. However, Applicants respectfully submit that the Examiner's assertion that it may be desirable in some instances to transmit a data rate request signal is not sufficient suggestion or motivation to establish a *prima facie* case that the present invention is obvious over the cited references.

The claimed invention as a whole must be considered in any obviousness determination. A mere selection of various bits and pieces of the claimed invention from various sources of prior art does not render a claimed invention obvious unless there is a suggestion or motivation in the prior art for the entirety of claimed invention. Accordingly, in the present case, the cited references must include some suggestion or motivation to modify the variable length image data encoding technique taught by Meyer such that the message frame, which Meyer teaches includes only image data, includes information indicative of a data transfer rate.

Applicants respectfully submit that simply asserting that it may be desirable in some instances to transmit a data rate request signal is not sufficient suggestion or motivation to modify the prior art in the manner described above. In particular, Applicants submit that Meyer and Pollman are only concerned with compressing image data and therefore both references are

completely silent with regard to transmitting variable length data indicative of a data transfer rate. Berger is concerned with data transfer rates, but is completely silent with regard to data compression techniques of any kind. Thus, Meyer, Pollman, and Berger all fail to provide any suggestion or motivation for the Examiner's proposed modification. In particular, Applicants respectfully submit that the prior art of record provides no suggestion or motivation for identifying at least a first plurality of messages indicative of a corresponding first plurality of data transmission rates and a second plurality of messages indicative of a corresponding second plurality of data transmission rates, as set forth in claim 1. Furthermore, Applicants submit that the prior art of record provides no suggestion or motivation for identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate request messages, as set forth in claims 10 and 37.

For at least the aforementioned reasons, Applicants respectfully submit that the Examiner has failed to make a *prima facie* case that the present invention is obvious over Meyer, Pollman, and/or Berger, either alone or in combination. Applicants respectfully request that the Examiner's rejections of claims 1-4, 10-13, and 37 under 35 U.S.C. 103(a) be REVERSED.

C. Claims 28-31 are not obvious over Meyer in view of Pollman and further in view of Berger.

As discussed above, Meyer describes a technique in which discrete cosine transform (DCT) coefficients provided by a high-definition television encoder are associated with codes, S_1-S_6, which may be represented by Huffman codes. The Huffman coding used to represent each code may be determined based on the probability of occurrence of the codes. See Meyer col. 1,

line 14 – col. 2, line 10 and Table 1. Pollman also describes a Huffman encoding scheme in which short code words are assigned to events with the highest probability of occurrence using a code book. See Pollman, col. 7, ll. 24-38. Berger describes transmitting a data rate request signal that may be used to transmit data blocks in a network.

However, the prior art of record is completely silent with regard to identifying a second group of messages having a second plurality of messages based on a current system state, as set forth in independent claim 28. For example, the cited references fail to describe or suggest identifying a group of new messages that may be represented by a one-bit code based upon a prior message, such as a prior message indicative of a data rate. See Patent Application, page 4, ll. 6-15.

For at least the aforementioned reasons, Applicants respectfully submit that the Examiner has failed to make a *prima facie* case that the present invention is obvious over Meyer, Pollman, and/or Berger, either alone or in combination. Applicants respectfully request that the Examiner's rejections of claims 28-31 under 35 U.S.C. 103(a) be REVERSED.

D. Claims 5-9, 14-17, and 38 are not obvious over Meyer in view of Pollman and Berger, and further in view of Padovani.

As discussed in detail above, Applicants submit that Meyer and Pollman are concerned with compressing image data and therefore both references are completely silent with regard to transmitting variable length data indicative of a data transfer rate. Berger is concerned with data transfer rates, but is completely silent with regard to compression techniques of any kind. Thus, Meyer, Pollman, and Berger all fail to provide any suggestion or motivation for the Examiner's proposed modification of the prior art of record. In particular, Applicants respectfully submit

that the prior art of record provides no suggestion or motivation for identifying at least a first plurality of messages indicative of a corresponding first plurality of data transmission rates and a second plurality of messages indicative of a corresponding second plurality of data transmission rates, as set forth in claim 5. Furthermore, Applicants submit that the prior art of record provides no suggestion or motivation for identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate request messages, as set forth in claims 14 and 38.

The Examiner relies on Padovani to teach that a message with fewer bits may be transmitted at lower power than a message with more bits. However, Padovani fails to remedy the aforementioned deficiencies of the other cited references.

For at least the aforementioned reasons, Applicants respectfully submit that the Examiner has failed to make a *prima facie* case that the present invention is obvious over Meyer, Pollman, Berger, and/or Padovani, either alone or in combination. Applicants respectfully request that the Examiner's rejections of claims 5-9, 14-17, and 38 under 35 U.S.C. 103(a) be REVERSED.

E. Claims 32-36 are not obvious over Meyer in view of Pollman and Berger, and further in view of Padovani.

As discussed above, Meyer describes a technique in which discrete cosine transform (DCT) coefficients provided by a high-definition television encoder are associated with codes, S_1-S_6, which may be represented by Huffman codes. The Huffman coding used to represent each code may be determined based on the probability of occurrence of the codes. See Meyer col. 1, line 14 – col. 2, line 10 and Table 1. Pollman also describes a Huffman encoding scheme in which short code words are assigned to events with the highest probability of occurrence using a

code book. See Pollman, col. 7, ll. 24-38. Berger describes transmitting a data rate request signal that may be used to transmit data blocks in a network.

However, the prior art of record is completely silent with regard to identifying a second group of messages having a second plurality of messages based on a current system state, as set forth in independent claim 32. For example, the cited references fail to describe or suggest identifying a group of new messages that may be represented by a one-bit code based upon a prior message, such as a prior message indicative of a data rate. See Patent Application, page 4, ll. 6-15.

The Examiner relies on Padovani to teach that a message with fewer bits may be transmitted at lower power than a message with more bits. However, Padovani fails to remedy the aforementioned deficiencies of the other cited references.

For at least the aforementioned reasons, Applicants respectfully submit that the Examiner has failed to make a *prima facie* case that the present invention is obvious over Meyer, Pollman, Berger, and/or Padovani, either alone or in combination. Applicants respectfully request that the Examiner's rejections of claims 32-36 under 35 U.S.C. 103(a) be REVERSED.

VIII. CLAIMS APPENDIX

The claims that are the subject of the present appeal – claims 1-17 and 28-38 – are set forth in the attached "Claims Appendix."

IX. EVIDENCE APPENDIX

There is no separate Evidence Appendix for this appeal.

X. RELATED PROCEEDINGS APPENDIX

There is no Related Proceedings Appendix for this appeal.

XI. CONCLUSION

In view of the foregoing, it is respectfully submitted that the Examiner erred in not allowing all claims pending in the present application, claims 1-17 ands 28-38, over the prior art of record. The undersigned may be contacted at (713) 934-4052 with respect to any questions, comments or suggestions relating to this appeal.

Respectfully submitted,

Date: 5/23/05

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AGENT FOR APPLICANTS

CLAIMS APPENDIX

1. (Previously Presented) A method for encoding messages, comprising the steps of:

identifying at least a first plurality of messages indicative of a corresponding first plurality of data transmission rates and second plurality of messages indicative of a corresponding second plurality of data transmission rates based on a prior transmitted message, where the first and second pluralities of messages are unequal; and

transmitting a message from one of at least the first and second pluralities of messages.

2. (Previously Presented) The method of claim 1, wherein a first number of bits used to represent messages in the first plurality of messages is different than a second number of bits used to represent messages in the second plurality of messages, where the first and second number of bits are at least equal to one.

3. (Previously Presented) The method of claim 1, wherein a message from the first plurality of messages has a higher probability of being transmitted than a message from the second plurality of messages.

4. (Previously Presented) The method of claim 3, wherein a first number of bits used to represent messages in the first plurality of messages is less than a second number of bits used to represent messages in the second plurality of messages, the first number of bits being at least equal to one.

5. (Previously Presented) A method for encoding messages, comprising the steps of:

identifying at least a first plurality of messages indicative of a corresponding first plurality of data transmission rates and a second plurality of messages indicative of a corresponding second plurality of data transmission rates based on a prior transmitted message, where the first and second plurality are unequal; and

transmitting a message from one of at least the first and second plurality of messages, where a message from the first plurality of messages is transmitted at a different power than a message from the second plurality of messages.

6. (Previously Presented) The method of claim 5, wherein a first number of bits used to represent messages in the first plurality of messages is different than a second number of bits used to represent messages in the second plurality of messages, where the first and second number of bits are at least equal to one.

7. (Previously Presented) The method of claim 5, wherein a message from the first plurality of messages has a higher probability of being transmitted than a message from the second plurality of messages.

8. (Previously Presented) The method of claim 7, wherein a first number of bits used to represent messages in the first plurality of messages is less than a second number of bits used to represent messages in the second plurality of messages, the first number of bits being at least equal to one.

9. (Previously Presented) The method of claim 8, wherein a message from the first plurality of messages is transmitted using less power than a message from the second plurality of messages.

10. (Original) A method for encoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate request messages based on a prior transmitted transmit rate request message, where the first and second plurality are unequal; and

transmitting a transmit rate request message from one of at least the first and second group of messages by replacing at least a portion of a pilot signal with a signal representing at least a portion of the transmit rate request message.

11. (Original) The method of claim 10, wherein a first number of bits used to represent messages in the first group is different than a second number of bits used to represent messages in the second group, where the first and second number of bits are at least equal to one.

12. (Original) The method of claim 10, wherein a message from the first group has a higher probability of being transmitted than a message from the second group.

13. (Original) The method of claim 12, wherein a first number of bits used to represent messages in the first group is less than a second number of bits used to represent messages in the second group, the first number of bits being at least equal to one.

14. (Original) A method for encoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate request messages based on a prior transmitted transmit rate request message, where the first and second plurality are unequal; and

transmitting a transmit rate request message from one of at least the first and second group of messages by replacing at least a portion of a pilot signal with a signal representing at least a portion of the transmit rate request message, where a message from the first group is transmitted at a different power than a message from the second group.

15. (Original) The method of claim 14, wherein a first number of bits used to represent messages in the first group is different than a second number of bits used to represent messages in the second group, where the first and second number of bits are at least equal to one.

16. (Original) The method of claim 14, wherein a message from the first group has a higher probability of being transmitted than a message from the second group.

17. (Original) The method of claim 16, wherein a first number of bits used to represent messages in the first group is less than a second number of bits used to represent messages in the second group, the first number of bits being at least equal to one.

18. (Withdrawn) A method for decoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of messages and a second group of messages having a secondary plurality of messages based on a prior received message, where the first and second plurality are unequal;

receiving a message; and

determining to which of at least the first and second group of messages that the message belongs based on an amount of power received with the message.

19. (Withdrawn) The method of claim 18, wherein a first number of bits used to identify messages in the first group is different than a second number of bits used to identify messages in the second group, where the first and second number of bits are at least equal to one.

20. (Withdrawn) The method of claim 18, wherein a message from the first group has a higher probability of being received than a message from the second group.

21. (Withdrawn) The method of claim 20, wherein a fist number of bits used to identify messages in the first group is less than a second number of bits used to identify message in the second group, the first number of bits being at least equal to one.

22. (Withdrawn) A method for decoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having and plurality of transmit rate request messages based on a prior received transmit rate request message, where the first and second plurality are unequal;

receiving a transmit rate request message where at least a portion of the transmit rate request message is interleaved with at least a portion of a pilot signal; and

determining to which of at least the first and second group of messages that the transmit rate request message belongs based on an amount of power received with the transmit rate request message.

23. (Withdrawn) The method of claim 22, wherein a first number of bits used to identify messages in the first group is different than a second number of bits used to identify messages in the second group, where the first and second number of bits are at least equal to one.

24. (Withdrawn) The method of claim 22, wherein a message from the first group has a higher probability of being received than a message from the second group.

25. (Withdrawn) The method of claim 24, wherein a first number of bits used to identify messages in the first group is less than a second number of bits used to identify messages in the second group, the first number of bits being at least equal to one.

26. (Withdrawn) The method of claim 22, wherein the amount of power received with the transmit rate request message is determined relative to an amount power received with another signal.

27. (Withdrawn) The method of claim 22, wherein the amount of power received with the transmit rate request message is determined relative to an amount of power received with the pilot signal.

28. (Original) A method for encoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of messages and a second group of messages having a second plurality of messages based on a current system state, where the first and second plurality are unequal; and

transmitting a message from one of at least the first and second group of messages.

29. (Original) The method of claim 28, wherein a first number of bits used to represent messages in the first group is different than a second number of bits used to represent messages in the second group, where the first and second number of bits are at least equal to one.

30. (Original) The method of claim 28, wherein a message from the first group has a higher probability of being transmitted than a message from the second group.

31. (Original) The method of claim 30, wherein a first number of bits used to represent messages in the first group is less than a second number of bits used to represent messages in the second group, the first number of bits being at least equal to one.

32. (Original) A method for encoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of messages and ~~a~~ second group of messages having a second plurality of messages based on a current system state, where the first and second plurality are unequal; and

transmitting a message from one of at least the first and second group of messages where a message from the first group is transmitted at a different power than a message from the second group.

33. (Original) The method of claim 32, wherein a first number of bits used to represent messages in the first group is different than a second number of bits used to represent messages in the second group, where the first and second number of bits are at least equal to one.

34. (Original) The method of claim 33, wherein a message from the first group has a higher probability of being transmitted than a message from the second group.

35. (Original) The method of claim 34, wherein a first number of bits used to represent messages in the first group is less than a second number of bits used to represent messages in the second group, the first number of bits being at least equal to one.

36. (Original) The method of claim 35, wherein a message from the first group is transmitted using less power than message from second group.

37. (Original) A method of encoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate request messages based on a current system state, where the first and second plurality are unequal; and

transmitting a transmit rate request messages from one of at least the first and second group of messages by replacing at least a portion of a pilot signal with a signal representing at least a portion of the transmit rate request message.

38. (Original) A method for encoding messages comprising the steps of:

identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate request messages based on a current system state, where the first and second plurality are unequal; and

transmitting a transmit rate request message from one of at least the first and second group of messages by replacing at least a portion of a pilot signal with a signal representing at least a portion of the transmit rate request message, where a message from the first group is transmitted at a different power than a message from the second group.

39. (Withdrawn) A method for decoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of messages and a second group of messages having a second plurality of messages based on a current system state, where the first and second plurality are unequal;

receiving a message; and

determining to which of at least the first and second group of messages that the message belongs based on an amount of power received with the message.

40. (Withdrawn) The method of claim 39, wherein a first number of bits used to identify messages in the first group is different than a second number of bits used to identify messages in the second group, where the first and second number of bits are at least equal to one.

41. (Withdrawn) The method of claim 39, wherein a message from the first group has a higher probability of being received than a message from the second group.

42. (Withdrawn) The method of claim 41, wherein a first number of bits used to identify messages in the first group is less than a second number of bits used to identify messages in the second group, the first number of bits being at least equal to one.

43. (Withdrawn) A method for decoding messages, comprising the steps of:

identifying at least a first group of messages having a first plurality of transmit rate request messages and a second group of messages having a second plurality of transmit rate

request messages based on a current system state, where the first and second plurality are unequal;

receiving a transmit rate request message where at least a portion of the transmit rate request message is interleaved with at least a portion of a pilot signal; and

determining to which of at least the first and second group of messages that the transmit rate request message belongs based on an amount of power received with the transmit rate request message.

44. (Withdrawn) The method of claim 43, wherein a first number of bits used to identify messages in the first group is different than a second number of bits used to identify messages in the second group, where the first and second number of bits are at least equal to one.

45. (Withdrawn) The method of claim 43, wherein a message from the first group has a higher probability of being received than a message from the second group.

46. (Withdrawn) The method of claim 45, wherein a first number of bits used to identify messages in the first group is less than a second number of bits used to identify messages in the second group, the first number of bits being at least equal to one.

47. (Withdrawn) The method of claim 43, wherein the amount of power received with the transmit rate request message is determined relative to an amount of power received with another signal.

48. (Withdrawn) The method of claim 43, wherein the amount of power received with the transmit rate request message is determined relative to an amount of power received with the pilot signal.